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From: Mike Johnson
Sent: Thur 4/6/2017 1:06:31 AM
Subject: Leviathan Mine Aspen Seep Bioreactor update

Lynda,

We wanted to give a brief update on current events at the Aspen Seep Bioreactor. We have been remotely monitoring the Aspen Seep Bioreactor and have been watching the flows increase steadily. In the last day we have seen a slight increase in the water elevation of Pond 4. This indicates that our influent flow rate is out pacing our effluent flow rate. Since a significant storm is forecasted, we are planning to attempt to access the site tomorrow to address the pond 4 water elevation and effluent flow rate. We still have roughly 75,000 gallons of storage available and our effluent flow rate is averaging 26 gpm. As currently configured, the maximum design flow capacity of the ASB Treatment System is 27 gpm. If we can gain safe access, we will complete the following tasks to protect against a possible exceedance of Pond 4 storage capacity:

- Check for and remove any obstructions to flow at the Pond 4 effluent launder.
- Pump water from near the effluent launder of pond 4 to the aeration channel to lower Pond 4 elevation.
- Increase piping size at outlet from 1 inch piping to 2 inch near the discharge of the aeration channel, including temporary removal of the 1" in-line effluent flowmeter. This will greatly increase overall capacity of the discharge of our system and help us manage future increased expected flow rates. Once we have safe access for four-wheel drive vehicles and supplies all the way to the ASB Treatment System, we will then change the piping back to the 1" PVC and re-connect the 1" flowmeter, or permanently switch to 2" PVC and a 2" flowmeter. Although we will not be able to directly monitor the effluent flow rate while the flow meter is disconnected, we will still be monitoring the influent flow rate, so we will still have a good indication of total flow through the ASB Treatment System. These plumbing modifications will not otherwise affect our ability to control the system components.

We don't anticipate these changes to negatively impact water quality of our discharge since Pond 4 is a final settling pond. Our site access may require some snowshoeing, so we are postponing compliance samples until we complete road work scheduled next week. Taking the compliance samples at that time should still give a representative sample.

Thanks,

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